

THREE NEW SPECIES OF *LINCUS*
(HEMIPTERA: PENTATOMIDAE) FROM PALMS

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Abstract.—Three new ochlerine pentatomid species, *Lincus hebes*, *L. spurcus* and *L. malevolus*, are described from specimens collected in Peru on various palms.

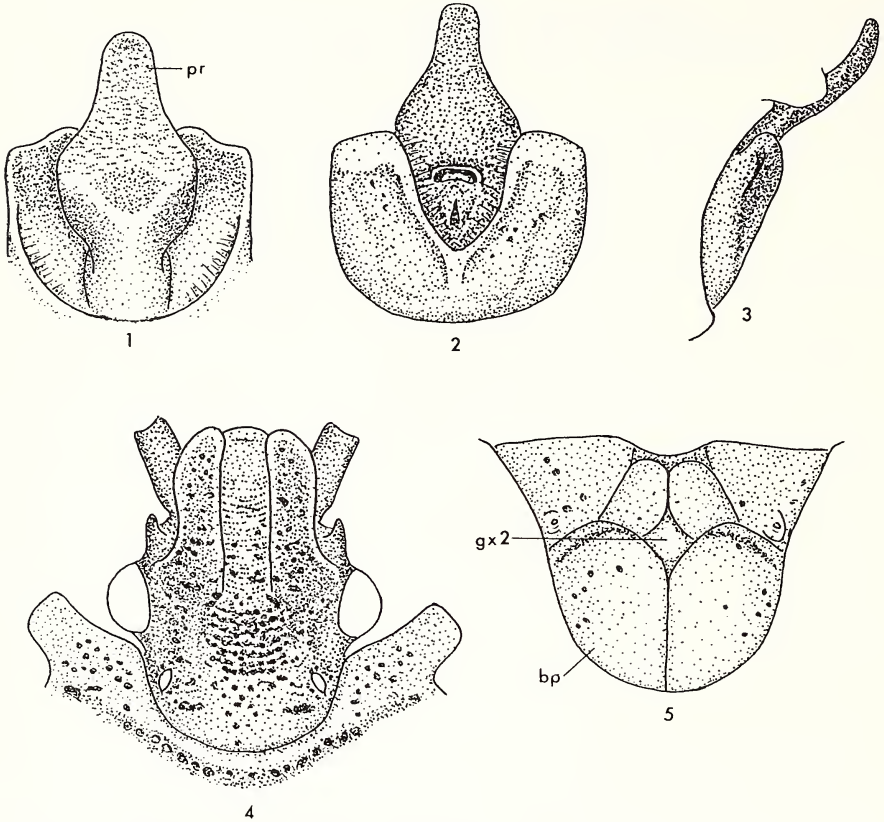
Of the 30 species treated in my revision of *Lincus*, only two specimens were accompanied by data that presumably indicate host plants (Rolston, 1983). Both specimens were *L. vandoesburgi* Rolston from Surinam, one taken "on roots [of] Liberian coffee" and the other on "oliepalm" (oil palm). Since then three species of *Lincus* have been reported from palms, *L. lethifer* Dolling, *L. apollo* Dolling and *L. croupius* Rolston (Dolling, 1984). *L. lethifer* is known to transmit "marchitez" of oil palm and the other two species have been associated with "heartrot" of coconut, both diseases caused by the flagellate *Phytophthora staheli*. The three new species described here, all from Peru, were also collected on palm.

***Lincus hebes*, new species**
Figs. 1-5

Description. Jugal projecting little if any beyond apex of tylus, their lateral margins reflexed for entire length, somewhat constricted above antennifers (Fig. 4). Eyes small, each 0.24-0.30 of interocular width; distance across ocelli 0.92-1.00 of interocular width. Vertex of head moderately convex. Anterolateral margins of pronotum sinuous, reflexed, most strongly reflexed along convexity immediately behind pronotal lobes; pronotal lobes depressed, curving dorsad, truncate apically, extending anteriorly beyond middle of eyes and laterally beyond eyes about 1.0-1.5 width of eye; emargination behind each lobe relatively shallow, distance across pronotum at this point about 1.4 times width of head across eyes. Metasternum slightly concave, without carina.

Proctiger protruding far past posterior margin of pygophore, curving well above last tergite (Fig. 3); apex narrowly rounded from dorsal and caudal views (Figs. 1, 2). Pygophoral emargination U-shaped but narrowly rounded ventrally, thinly rimmed, with broad, shallowly concave border interrupted mesoventrally by confluence of rims into narrow, mesial carina (Fig. 2). Genital cup a simple concavity without setal tufts or conspicuous carinae, but rugose posteriorly. Genital plates as in Figure 5; posterolateral border of basal plates impressed; second gonocoxae polished.

Dorsum fuscous with few to several small, pale, interstitial macules scattered on hemelytra and usually on scutellum and pronotum; lateral margins of tylus pale bordered toward apex; pale, marginal macule often present on each of some or all connexival sclerites. Pronotum and scutellum appreciably rugose, particularly toward base of each, with punctures arranged in irregular transverse lines.



Figs. 1-5. *L. hebes*. 1. Pygophore, dorsal view. 2. Same, caudoventral view. 3. Same, lateral view. 4. Head and anterior portion of pronotum. 5. Genital plates, caudoventral view. Symbols: bp, basal plate; gx2, second gonocoxae; pr, proctiger.

Venter fuscous, partially pale bordered on each side of pronotum and base of hemelytron, and sometimes on abdominal sternites. Three basal segments of antennae fuscous, apical two segments lighter in color with basal half of last segment and sometimes apical half of segment 4 cream; rostrum, trochanters, sides of tibiae, tarsi and trichobothrial tubercles usually light brown or yellowish brown. Punctuation on abdominal venter shallow, moderately dense.

Measurements (mm). Width of head 1.75-1.90, length 1.85-2.10; interocular width 1.10-1.20; distance across ocelli 1.05-1.15, between ocelli 0.80-0.95, from each ocellus to nearest eye 0.25-0.30. Length of segments 1-5 of antennae 0.60-0.70, 0.60-0.90, 0.90-1.00, 0.95-1.10, 1.2. Length of segments 1-4 of labium 1.10-1.30, 2.60-2.85, 2.00-2.30, 2.15-2.30. Pronotum 4.7-5.7 wide, 2.2-2.7 long mesially. Scutellum 2.7-3.6 wide at base, 3.7-4.4 long. Body length, excluding proctiger of males, 9.2-11.3.

Distribution. Peru (Madre de Dios).

Holotype. Male, labeled "Pérou-Mazuco, (Madre de Dios), 27 sept. 1987, F. Kahn & J. Llosa coll." and "sur *Astrocaryum* sp. aff. *A. macrocalyx* Burrett. ref. FK2094." Deposited in the Museum National d'Histoire Naturelle, Paris.

Paratypes. 3 females and 7 males with same labeling as holotype, and 6 males labeled "Pérou, Puerto Maldonado, (Madre de Dios), 1 novem. 1987, F. Kahn & J. Llosa coll." and "sur *Astrocaryum* sp. aff. *A. macrocalyx* Burrett. ref. FK2147."

Comments. This species belongs among the "little eyed" group of species in which the width of each eye is less than one-half of the interocular width. The only other species of this group in which the proctiger is known to project well beyond the posterior pygophoral margin is *varius* Rolston, although *armigera* Breddin and *leviventris* Rolston are known only from the female holotypes. In my key to *Lincus* species (Rolston, 1983), this species runs to *armigera*, but the two species apparently differ significantly in the form and size of the pronotal lobes.

***Lincus spurcus*, new species**

Figs. 9–11, 15, 16

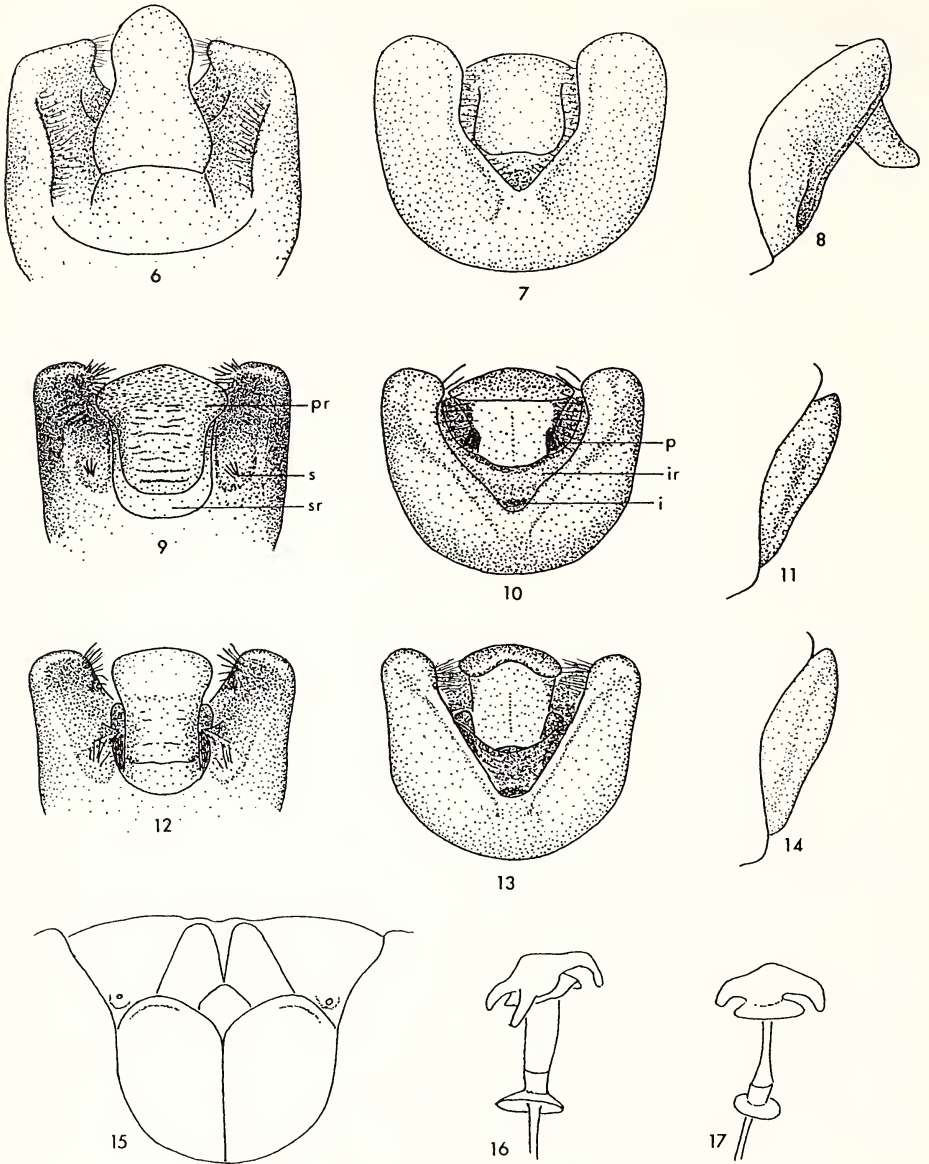
Description. Jugal projecting slightly past tylus, their lateral margins reflexed along preocular concavity, parallel between this concavity and apical convexity. Width of eye 0.41–0.46 of interocular width; distance across ocelli 0.95–1.00 of interocular width. Ridge on each side of head running along ventral surface from base of head to antennifer weak, not differentially colored. Vertex of head moderately convex. Anterolateral pronotal margins sinuous, somewhat reflexed; pronotal lobes tapering to narrowly rounded apex, extending anteriorly to or near imaginary, transverse line at posterior limit of eyes and laterally beyond eyes by 0.4–0.7 width of eye; emargination behind each lobe shallow, distance across pronotum at this point about 1.1–1.2 width of head across eyes. Metasternum flat, hirsute, with weak, thin mesial carina failing to reach posterior margin.

Proctiger contained entirely within genital cup, its apex greatly expanded (Fig. 9). Shallow depression within genital cup on each side of superior ridge bearing tuft of setae. Pygophoral emargination somewhat lyre shaped from caudoventral view; rim on each side of emargination joining mesoventrally into broad, flat carina (Fig. 10). Deep, ovoid, mesial impression present at base of inferior ridge. Apices of parameres visible from caudoventral view. Profile of pygophore slightly sinuous (Fig. 11). Genital plates as in Figure 15; basal plates convex, posterolateral border faintly impressed at most; second gonocoxae dull. Spermathecal bulb with three diverticula (Fig. 16).

Dorsum usually black, occasional specimen fuscous to light brown, with small, pale macule on disk of each corium and on each humeral angle; pale markings on connexival segments irregularly and variably shaped, inconspicuous. Pronotum and basal disk of scutellum rugosely punctate, most punctures arranged in irregular, transverse rows.

Venter fuscous to black with anterolateral margins of propleura and interstices between punctures on abdomen, excepting broad, mesial vitta, yellowish brown. Three basal segments of each antenna black or brown, fourth usually lighter, fifth pale. Rostrum and tarsi yellowish brown. Punctuation on abdomen black, moderately strong and irregularly spaced where interstices pale.

Measurements (mm). Width of head 1.95–2.15, length 1.80–1.95; interocular width



Figs. 6-17. 6-8. *L. varius*. 6. Pygophore, dorsal view. 7. Same, caudoventral view. 8. same, lateral view. 9-11, 15, 16. *L. spurcus*. 9. Pygophore, dorsal view. 10. Same, caudoventral view. 11. Same, lateral view. 15. Genital plates, caudoventral view. 16. Spermathecal bulb. 12-14, 17. *L. malevolus*. 12. Pygophore, dorsal view. 13. Same, caudoventral view. 14. Same, lateral view. 17. Spermathecal bulb. Symbols: i, impression; ir, inferior ridge; p, paramere; pr, proctiger; s, setal tuft; sr, superior ridge.

1.05–1.15; distance across ocelli 1.05–1.15, between each ocellus and nearest eye 0.20–0.25. Length of segments 1–5 of antennae 0.55–0.70, 0.65–0.75, 1.05–1.20, 1.25–1.40, 1.65–1.80. Length of segments 1–4 of labium 1.10–1.25, 2.20–2.30, 1.80–1.95, 1.75–1.90. Pronotum 4.9–5.6 wide, 2.2–2.4 long mesially. Scutellum 3.0–3.6 wide at base, 3.6–4.3 long. Body length 9.1–10.8.

Distribution. Peru (San Martín).

Holotype. Male, labeled “Perou, Tocache, XI.1987. sur palmier. R. Huguenot” and “Plantation de palmesa 7196.” Deposited in the Museum National d’Histoire Naturelle, Paris.

Paratypes. 1 male and 2 females with same labeling as holotype; 1 male and 2 females labeled “Perou, Sector Cañuto Tocache, palmier a huile. 8 II 1986. Esmilda Arevalo”; 1 male labeled “C. Bolivar. Saposoa. Peru. Piscoyem. 6/IX/40”; 12 males and 9 females labeled “Perou-Uchiza, Plantat. Palmas del Espino, 20.8.1987. G. Couturier & F. Kahn Coll.” and “sur *Astrocaryum* sp. aff. *A. murumuru* Mart. (Palmae) ref. herbier F. Kahn 1933”; 9 males and 7 females labeled “Peru-San Martin, Endepalma-Uchiza, april 1988, Julio Llosa coll.” and “host plant *Elaeis guineensis* (Palmae).

Comments. This species also belongs among the “little eyed” group of species in which the width of each eye is less than one-half of the interocular width. In my key to *Lincus* species (Rolston, 1983), it most nearly fits the alternatives leading to *varius* Rolston. These two species differ in several particulars, especially the form of the proctiger and punctuation of the abdominal venter. In *varius* the proctiger protrudes from the genital cup and the punctuation of the abdominal venter is inconspicuous (Figs. 6–8).

***Lincus malevolus*, new species**

Figs. 12–14, 17

Description. Similar to *L. spurcus* in coloration, punctuation and somatic morphology, differing markedly in male genitalia. On average slightly larger than *L. spurcus*, eyes often a little larger, 0.41–0.50 of interocular width. Metasternum slightly tectiform, hirsute.

Proctiger contained entirely within genital cup, apex moderately expanded (Fig. 12). Pygophoral emargination V-shaped from caudoventral view (Fig. 13); rim on each side of emargination joining mesoventrally into broad, flat carina. Deep, mesial impression present at base of inferior ridge. Apices of parameres visible from caudoventral view. Profile of pygophore moderately sinuous from lateral view (Fig. 14). Genital plates as in *L. spurcus*. Spermathecal bulb with two diverticula (Fig. 17).

Measurements (mm). Width of head 2.00–2.20, length 1.80–2.10; interocular width 1.05–1.15; distance across ocelli 1.05–1.15, between ocelli 0.75–0.85, from each ocellus to nearest eye 0.20–0.25. Length of segments 1–5 of antennae 0.60–0.70, 0.55–0.80, 1.00–1.20, 1.15–1.40, 1.50–1.67. Length of segments 1–4 of labium 1.15–1.30, 2.10–2.35, 1.70–1.90, 1.70–1.90. Pronotum 4.8–5.7 wide, 2.1–2.5 wide at incisions behind lobes, 2.1–2.6 long mesially. Scutellum 3.1–3.6 wide basally, 3.7–4.4 long. Body length 9.6–11.3.

Distribution. Peru (Loreto).

Holotype. Male, labeled “Perou—4°55S 73°40W, Jenaro Herrera, 1.9.1987, G.

Couturier & F. Kahn Coll.," "sur *Astrocaryum macrocalyx* (Palmae)" and "El Capite (quebrada)." Deposited in the Museum National d'Histoire Naturelle, Paris.

Paratypes. 12 males and 12 females with same labeling as holotype; 7 males and 10 females with same labeling as holotype except date 31.8.1987; 16 females with same labeling as holotype except lacking last label and dated 27.8.1987; 1 male and 14 females with same labeling as holotype except lacking last label and dated 29.8.1987; 3 females with same labeling as holotype except lacking last label and dated 4.9.1987; 2 males and 2 females with same labeling as holotype except lacking last label and dated 30.8.1987; 1 male and 6 females labeled "Peru-Loreto, Jenaro Herrera, June 1988, Julio Llosa col" and "host plant *Elaeis oleifera* (Palmae)"; 3 males and 16 females labeled "Peru-Loreto, Maniti, June 1988, Julio Llosa col." and "host plant *Astrocaryum* sp."

Comments. This species does not fall clearly into any of the species groups of convenience. Those specimens with an eye width less than one half of the interocular width most nearly fit the alternatives in my key (Rolston, 1983) that lead to *L. varius*. The remaining male specimens key to the couplet separating *L. substylinger* and *L. subuliger* but fit neither alternative.

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